

# Protein Domains/Families/Ontologies (According to InterPro, GO, and/or BLOCKS)

GO:0006935 GO:0005887 GO:0004872 GO:0016021 GO:0007186 GO:0001584 GO:0007204 GO:0006968 GO:0016493 GO:0004945 GO:0016494

#### Blocks protein families:

<u>IPB000276</u> Rhodopsin-like GPCR superfamily

PR01531 C-C chemokine receptor type 9 signature

# Sequences

(GenBank/EMBL/DDBJ
Accessions According to
Unigene or GenBank, RefSeq
According to LocusLink,
Assembly According to MIPS
and/or DOTS)

### REFSEQ mRNAs (2 alternative transcripts):

NM 006641.2 NM 031200.1

#### Additional Gene/cDNA sequence:

AF145207.1 AF145439 AF145439.1 AF145440 AF145440.1 AJ132337 AJ1:

MIPS assembly: H43337S1

#### **DOTS** assembly:

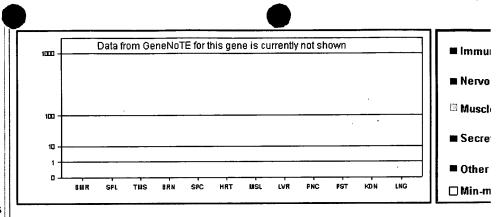
DT.70101854

Unigene Cluster for CCR9: (Build 155 Homo sapiens; Sep 23 2002)

chemokine (C-C motif) receptor 9 Hs.225946 [show with all **ESTs**]

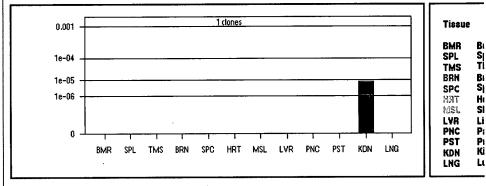
Unigene Representative Sequence: NM 031200

CCR9 expression in normal human tissues based on proprietary W.I.S DNA



Expression in Human Tissues (According to proprietary W.I.S DNA array results (GeneNoTE), UniGene and/or SOURCE)

# CCR9 expression in normal human tissues based on quantifying ESTs from



SOURCE GeneReport for Unigene cluster Hs.225946

# Similar Genes in Other Organisms

(According to MGD Oct 18 2002 , Stony Brook C.elegans-H.sapiens Alignment Database and/or euGenes)

# Homologues:

	gene	locus	description
mouse (MGD)	Ccr9	9	chemokine (C-C motif) receptor 9
C. elegans (Stony Brook)	C50F7.1	i	description: Caenorhabditis elegans cosmid C50f sequence

Variants: SWISS-PROT: CKR9 HUMAN

NCBI SNPs: 5 selected, not withdrawn, single nucleotide mutations are shown he

Genomic Data						
SNP ID Contig Accession		Position in Contig	:1	5' Flanking Sequence*	3' Fla Sequ	
<u>rs1985356</u>	NT 034534.1	1484187	+	aaagtgggtggatta	gaggtca	
rs1985463	NT_034534.1	1484382	+	gcactccagcctggg	agcaaga	
rs1488371	NT 034534.1	1481835	-	CACCCCTCAAGGGCT	TTCCTCC	
rs2236938	NT 034534.1	1482685	-	AGACTGAATCCCAGA	AAGGACA <sup>-</sup>	
rs875891	NT_034534.1	1488903	-	CTCCCTGGCTGCTGC	CATGTCT	

SNPs/Variants
(According to the NCBI SNP
Database and to SWISS-PROT

\* Lower case letters indicate repetitive or low-complexity sequence

All NCBI SNPs in CCR9

**Disorders & Mutations** 

(in which this Gene is Involved, According to OMIM, SWISS-PROT, Genatlas, GeneClinics, HGMD, BCGD, and/or TGDB.)						
Medical News (Possibly Related Articles in Doctor's Guide)						
	Cutting edge: identification of the orphan chemokine receptor GPR-9-6 as C					
Research Articles (in <u>PubMed)</u>	Search PubMed for CCR9 to find abstracts of research articles co					
CCR9 in Other Genome Wide Resources: (According to GDB, LocusLink, euGenes, Ensembl and/or GeneLynx)	GDB: 9958889 LocusLink: 10803 euGenes: HUgn10803 Ensembl: EN					
CCR9 in General Databases, Limited Scope (According to HUGE)						
CCR9 in Specialized  Databases (According to ATLAS, GENATLAS, HORDE, IMGT, MTDB, LEIDEN and/or SWISS-PROT)	name  Genatlas biochemistry entry for CCR9: chemokine CC,beta receptor 9,G profesthymus,receptor for the chemokine TECK					
Services (According to RZPD)	Search RZPD for clones of CCR9 Clone collection at the German Human Geno					
Back (to Search Results)	- More like this					
Search the web for CCR9	- search millions of <b>Web pages</b> with <b>Excite</b> to find other web sites related					
GeneCards Homepage - How to	Search or Cite this Database - Last Update: 22 Oct 2002					
Search GeneCards for	Go					
Display the GeneCard of a random Display the GeneCard of a random						
The GeneCards idea in brief: Minir	ng the Internet for biomedical knowledge and guiding the user to it.					
Developed at the <u>Crown Human Genome Center</u> & <u>Weizn</u>	ann Institute of Science					
Back to top	Copyright © 1997-2001 Weizmann Institute of .					







PubMed N	ucleotide Protein Genome Structure PopSet Taxonomy OMIM Books
Search PubMed	for TECK and CCR9
	Limits Preview/Index History Clipboard Details
	History has expired due to inactivity.
	Display Summary ▼ Sort ▼ Save Text Clip Add Order
Entrez	Show: 20  Tems 1-18 of 18 One page.
PubMed	SIOW. 20 PEST
	1: Marsal J, Svensson M, Ericsson A, Iranpour AH, Carramolino L, Marquez Related Articles, Links G, Agace WW.
	Involvement of CCL25 (TECK) in the generation of the murine small-intestinal
PubMed	CD8alpha alpha+CD3+ intraepithelial lymphocyte compartment. Eur J Immunol. 2002 Dec;32(12):3488-97.
Services	PMID: 12442331 [PubMed - in process]
	2: Onai N, Kitabatake M, Zhang YY, Ishikawa H, Ishikawa S, Matsushima Related Articles, Links K.
	Pivotal role of CCL25 (TECK)-CCR9 in the formation of gut cryptopatches and
	consequent appearance of intestinal intraepithelial T lymphocytes.
	Int Immunol. 2002 Jul;14(7):687-94. PMID: 12096027 [PubMed - in process]
	3: Youn BS, Yu KY, Oh J, Lee J, Lee TH, Broxmeyer HE. Related Articles, Links
Related Resources	Role of the CC chemokine receptor 9/TECK interaction in apoptosis. Apoptosis. 2002 Jun;7(3):271-6. PMID: 11997671 [PubMed - in process]
	14: Uehara S, Song K, Farber JM, Love PE.  Related Articles, Links
	Characterization of CCR9 expression and CCL25/thymus-expressed chemokine responsiveness during T cell development: CD3(high)CD69+ thymocytes and gammadeltaTCR+ thymocytes preferentially respond to CCL25.  J Immunol. 2002 Jan 1;168(1):134-42.
	PMID: 11751956 [PubMed - indexed for MEDLINE]
	5: Miyazaki K, Inoue H, Onai N, Ishihara H, Kanno M. Related Articles, Links
	Chemokine-mediated thymopoiesis is regulated by a mammalian Polycomb group
	gene, mel-18.
	Immunol Lett. 2002 Feb 1;80(2):139-43. PMID: 11750047 [PubMed - indexed for MEDLINE]
	6: Olaussen RW, Farstad IN, Brandtzaeg P, Rugtveit J. Related Articles, Links
	Age-related changes in CCR9+ circulating lymphocytes: are CCR9+ naive T cells
	recent thymic emigrants?
	Scand J Immunol. 2001 Nov;54(5):435-9. PMID: 11696193 [PubMed - indexed for MEDLINE]

T: Wurbel MA, Malissen M, Guy-Grand D, Meffre E, Nussenzweig MC, Related Articles, Links Richelme M, Carrier A, Malissen B.

Mice lacking the CCR9 CC-chemokine receptor show a mild impairment of early T-and B-cell development and a reduction in T-cell receptor gammadelta(+) gut

intraepithelial lymphocytes. Blood. 2001 Nov 1;98(9):2626-32.

PMID: 11675330 [PubMed - indexed for MEDLINE]

8: Youn BS, Kim YJ, Mantel C, Yu KY, Broxmeyer HE.

Related Articles, Links

Blocking of c-FLIP(L)--independent cycloheximide-induced apoptosis or Fas-mediated apoptosis by the CC chemokine receptor 9/TECK interaction.

Blood. 2001 Aug 15;98(4):925-33.

PMID: 11493434 [PubMed - indexed for MEDLINE]

Papadakis KA, Prehn J, Moreno ST, Cheng L, Kouroumalis EA, Deem R, Related Articles, Links Breaverman T, Ponath PD, Andrew DP, Green PH, Hodge MR, Binder SW, Targan SR.

CCR9-positive lymphocytes and thymus-expressed chemokine distinguish small bowel from colonic Crohn's disease.

Gastroenterology. 2001 Aug;121(2):246-54.

PMID: 11487533 [PubMed - indexed for MEDLINE]

10: Carramolino L, Zaballos A, Kremer L, Villares R, Martin P, Ardavin C, Related Articles, Links Martinez-A C, Marquez G.

Expression of CCR9 beta-chemokine receptor is modulated in thymocyte differentiation and is selectively maintained in CD8(+) T cells from secondary lymphoid organs.

Blood. 2001 Feb 15:97(4):850-7.

PMID: 11159507 [PubMed - indexed for MEDLINE]

11: Papadakis KA, Prehn J, Nelson V, Cheng L, Binder SW, Ponath PD, Andrew DP, Targan SR.

Related Articles, Links

The role of thymus-expressed chemokine and its receptor CCR9 on lymphocytes in the regional specialization of the mucosal immune system.

J Immunol. 2000 Nov 1;165(9):5069-76.

PMID: 11046037 [PubMed - indexed for MEDLINE]

Ebert EC, Vierra MA, Goodman SB, Genovese MC, Wardlaw AJ,
Greenberg HB, Parker CM, Butcher EC, Andrew DP, Agace WW.

Related Articles, Links
Parker CM, Butcher EC, Andrew DP, Agace WW.

Lymphocyte CC chemokine receptor 9 and epithelial thymus-expressed chemokine (TECK) expression distinguish the small intestinal immune compartment: Epithelial expression of tissue-specific chemokines as an organizing principle in regional immunity.

J Exp Med. 2000 Sep 4;192(5):761-8.

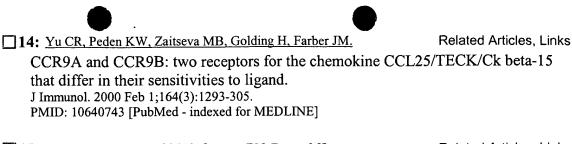
PMID: 10974041 [PubMed - indexed for MEDLINE]

13: Gosling J, Dairaghi DJ, Wang Y, Hanley M, Talbot D, Miao Z, Schall Related Articles, Links TJ.

Cutting edge: identification of a novel chemokine receptor that binds dendritic cell-and T cell-active chemokines including ELC, SLC, and TECK.

J Immunol. 2000 Mar 15;164(6):2851-6.

PMID: 10706668 [PubMed - indexed for MEDLINE]



15: Norment AM, Bogatzki LY, Gantner BN, Bevan MJ.

Related Articles, Links

Murine CCR9, a chemokine receptor for thymus-expressed chemokine that is up-regulated following pre-TCR signaling.

J Immunol. 2000 Jan 15;164(2):639-48.

PMID: 10623805 [PubMed - indexed for MEDLINE]

Wurbel MA, Philippe JM, Nguyen C, Victorero G, Freeman T, Wooding Related Articles, Links P, Miazek A, Mattei MG, Malissen M, Jordan BR, Malissen B, Carrier A, Naquet P.

The chemokine TECK is expressed by thymic and intestinal epithelial cells and attracts double- and single-positive thymocytes expressing the TECK receptor CCR9.

Eur J Immunol. 2000 Jan;30(1):262-71.

PMID: 10602049 [PubMed - indexed for MEDLINE]

17: Youn BS, Kim CH, Smith FO, Broxmeyer HE.

Related Articles, Links

TECK, an efficacious chemoattractant for human thymocytes, uses GPR-9-6/CCR9 as a specific receptor.

Blood. 1999 Oct 1;94(7):2533-6.

PMID: 10498628 [PubMed - indexed for MEDLINE]

18: Zaballos A, Gutierrez J, Varona R, Ardavin C, Marquez G.

Related Articles, Links

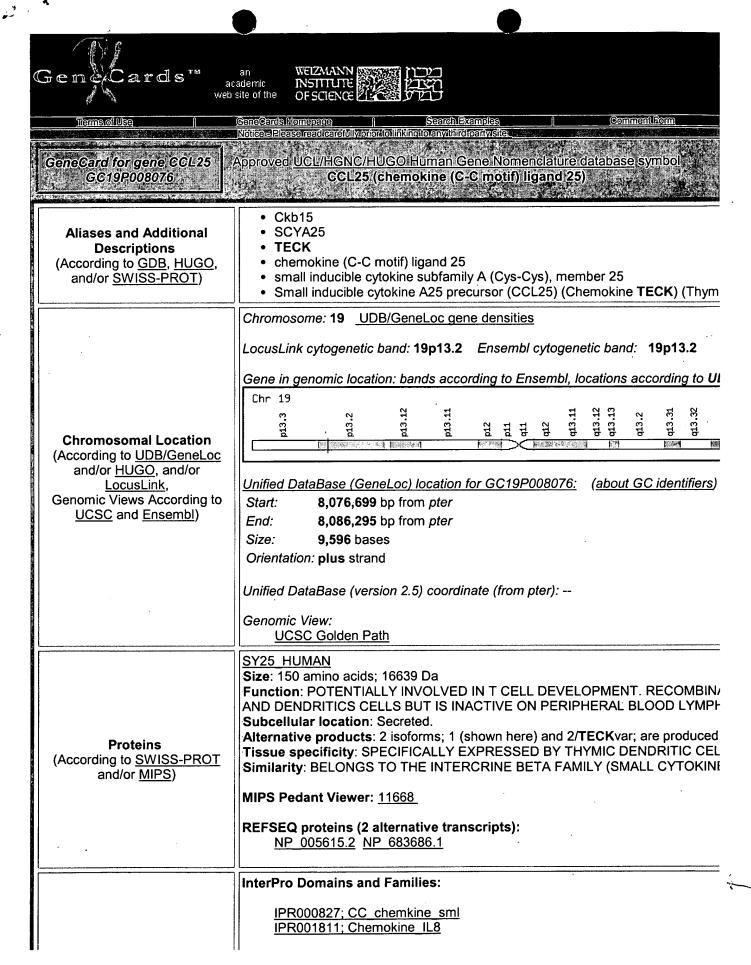
Cutting edge: identification of the orphan chemokine receptor GPR-9-6 as CCR9, the receptor for the chemokine TECK.

J Immunol. 1999 May 15;162(10):5671-5.

PMID: 10229797 [PubMed - indexed for MEDLINE]

Display Summan	y Sort	Save Text Cl	ip Add Order
Show: 20 <b>v</b>	Items 1-18 of 18	3	One page.

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### Graphical View of Domain Structure for SP Entry O15444

# Protein Domains/Families/Ontologies (According to InterPro, GO, and/or BLOCKS)

# Gene Ontology (GO) terms (tree view):

GO:0006935 GO:0005576

GO:0005625 GO:0006954

GO:0006954 GO:0006955

GO:0007186

GO:0005180

GO:0008009

Blocks protein family: <u>IPB000827</u> Small cytokines (intercrine/chemokine)

# Sequences

(GenBank/EMBL/DDBJ Accessions According to Unigene or GenBank, RefSeq According to LocusLink, Assembly According to MIPS and/or DOTS)

# REFSEQ mRNAs (2 alternative transcripts):

NM 005624.2 NM 148888.1

### Additional Gene/cDNA sequence:

AB046579 AB046579.1 Al313430.1 Al961745.1 U86358 U86358.1

MIPS assembly: H8396S1

# DOTS assembly:

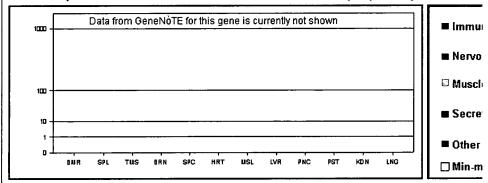
DT.454999

Unigene Cluster for CCL25: (Build 155 Homo sapiens; Sep 23 2002)

chemokine (C-C motif) ligand 25 Hs.50404 [show with all **ESTs**]

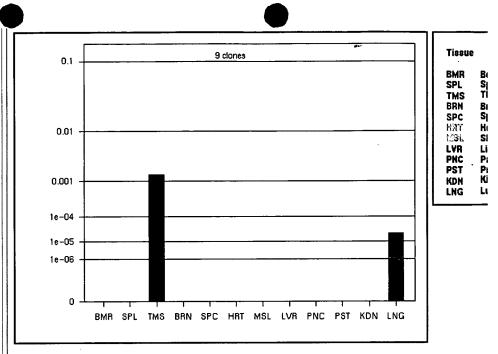
Unigene Representative Sequence: NM 005624

# CCL25 expression in normal human tissues based on proprietary W.I.S DN/



CCL25 expression in normal human tissues based on quantifying ESTs fror

**Expression in Human Tissues** (According to proprietary W.I.S DNA array results (GeneNoTE), UniGene and/or SOURCE)



SOURCE GeneReport for Unigene cluster Hs.50404

# Similar Genes in Other **Organisms**

(According to MGD Oct 28 2002 , Stony Brook C.elegans-H.sapiens Alignment Database and/or euGenes)

**SNPs/Variants** 

# **Homologues:**

	gene	locus	description	%similarity to huma
mouse (MGD)	Ccl25	8 (1.00 cM)	chemokine (C-C motif) ligand 25	

Variants: SWISS-PROT: SY25 HUMAN

NCBI SNPs: 10/14 selected, not withdrawn, single nucleotide mutations are show Click here to see all of them

# (According to the NCBI SNP Database and to SWISS-PROT

Genomic Data					
SNP ID	Contig Accession	Position in Contig		5' Flanking Sequence*	3' Flanki
rs2287936	NT_011145.12	1693091	+	TTTTGCCGCTCCGGG	ACCAGC
rs3136651	NT 011145.12	1684771	+	ACACTGGGTCCTACA	ССТСТС
rs3136652	NT 011145.12	1684816	+	GGGTCCCTGGCTGGG	GGCAGA
rs3136653	NT_011145.12	1684978	+	CCCAGCCCAGCCCTT	GATCCT
rs2303166	NT_011145.12	1688687	+	GAGAGGTGGTTGTGC	GTCAGT
rs2303164	NT_011145.12	1688497	+	CTCCAAGTTATCATC	TCCAAG
rs918638	NT 011145.12	1688044	-	caaggctgcagtgag	tgtga
rs2336092	NT 011145.12	1692476	+	ccctgtctctaaaat	caaaa
rs3826741	NT 011145.12	1684710	+	TTGAGGATTTCAGTC	CCAAAG
rs2303167	NT 011145.12	1688721	+	CAGGGGAGGGTCCTC	GTGGCT

<sup>\*</sup> Lower case letters indicate repetitive or low-complexity sequence

#### All NCBI SNPs in CCL25

**Disorders & Mutations** (in which this Gene is Involved, According to OMIM, SWISS-PROT, Genatlas, GeneClinics, HGMD, BCGD,

12/2/02 8:23 AM

and/or <u>TGDB</u> .)	·
Medical News (Possibly Related Articles in Doctor's Guide)	
Research Articles (in <u>PubMed)</u>	TECK: a novel CC chemokine specifically expressed by thymic dendritic cel     Cutting edge: identification of the orphan chemokine receptor GPR-9-6 as C     The human CC chemokine TECK (SCYA25) maps to chromosome 19p13.2  Search PubMed for CCL25  to find abstracts of research articles of the control of the orphan chemokine receptor GPR-9-6 as C     The human CC chemokine TECK (SCYA25) maps to chromosome 19p13.2
CCL25 in Other Genome Wide Resources: (According to GDB, LocusLink, euGenes, Ensembl and/or GeneLynx)	GDB: 9574254 LocusLink: 6370 euGenes: HUgn6370 Ensembl: ENSC
CCL25 in General Databases, Limited Scope (According to HUGE)	
CCL25 in Specialized  Databases (According to ATLAS, GENATLAS, HORDE, IMGT, MTDB, LEIDEN and/or SWISS-PROT)	
Services (According to RZPD)	
Back (to Search Results)	- More like this
Search the web for CCL25	- search millions of <b>Web pages</b> with <b>Excite</b> to find other web sites related
GeneCards Homepage - How to	o <u>Search</u> or <u>Cite</u> this Database - Last <b>Update</b> : 31 Oct 2002
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The GeneCards idea in brief: Minim	ng the Internet for biomedical knowledge and guiding the user to it.
Developed at the <u>Crown Human Genome Center</u> & <u>Weizr</u> Back to top	nann Institute of Science
Spon IV IVV	Copyright, © 1997-2001, Weizmann Institute c

(FILE 'HOME' ENTERED AT 09:31:53 ON 02 DEC 2002)

FILE	······································
L1	165 S CCR9 OR CCR9A OR CCR9B OR GPR-9-6 OR GPR9-6 OR GRP96 OR
CMKBR	
L2	151 S L1 AND CHEMOKINE
L3	71 DUP REM L2 (80 DUPLICATES REMOVED)
L4	9 S L3 AND PY<2000
L5	182 S TECK AND CHEMOKINE
L6	43 S L5 AND PY<2000
L7	19 DUP REM L6 (24 DUPLICATES REMOVED)

ACCESSION NUMBER:

1998285773 MEDLINE

DOCUMENT NUMBER:

98285773 PubMed ID: 9621075

TITLE:

The orphan seven-transmembrane receptor apj supports the entry of primary T-cell-line-tropic and dualtropic human

immunodeficiency virus type 1.

AUTHOR:

Choe H; Farzan M; Konkel M; Martin K; Sun Y; Marcon L; Cayabyab M; Berman M; Dorf M E; Gerard N; Gerard C;

Sodroski J

CORPORATE SOURCE:

Division of Human Retrovirology, Dana-Farber Cancer

Institute, Boston, Massachusetts 02115, USA.

CONTRACT NUMBER:

AI 24755 (NIAID)

AI 28691 (NIAID) AI 41851 (NIAID)

SOURCE:

JOURNAL OF VIROLOGY, (1998 Jul) 72 (7) 6113-8.

Journal code: 0113724. ISSN: 0022-538X.

PUB. COUNTRY:

United States

DOCUMENT TYPE:

Journal; Article; (JOURNAL ARTICLE)

LANGUAGE:

English

FILE SEGMENT:

Priority Journals; AIDS

ENTRY MONTH:

199807

ENTRY DATE:

Entered STN: 19980713

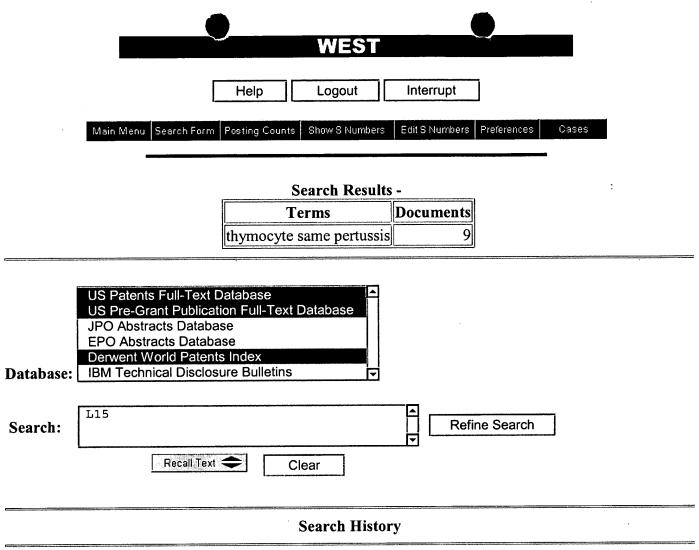
Last Updated on STN: 19980713

Entered Medline: 19980701

AB Human immunodeficiency virus type 1 (HIV-1) enters target cells by sequential binding to CD4 and specific seven-transmembrane-segment (7TMS) coreceptors. Viruses use the **chemokine** receptor CCR5 as a coreceptor in the early, asymptomatic stages of HIV-1 infection but can adapt to the use of other receptors such as CXCR4 and CCR3 as the infection proceeds. Here we identify one such coreceptor, Apj, which supported the efficient entry of several primary T-cell-line tropic (T-tropic) and dualtropic HIV-1 isolates and the simian immunodeficiency virus SIVmac316. Another 7TMS protein, CCR9, supported the less efficient entry of one primary T-tropic isolate. mRNAs for both receptors were present in phytohemagglutinin- and interleukin-2-activated peripheral

blood mononuclear cells. Apj and CCR9 share with other coreceptors for HIV-1 and SIV an N-terminal region rich in aromatic and acidic residues. These results highlight properties common to 7TMS proteins that can function as HIV-1 coreceptors, and they may contribute to an understanding of viral evolution in infected individuals.

This "06" - 6 mills relied core but a default protein VI GPRS-6



DATE: Monday, December 02, 2002 Printable Copy Create Case

Set Nam side by sid		Hit Count	Set Name result set
DB=U			
<u>L15</u>	thymocyte same pertussis	9	<u>L15</u>
<u>L14</u>	L13 and pertussis.clm.	24	<u>L14</u>
<u>L13</u>	L11 and (dendritic or thymocyte)	452	<u>L13</u>
<u>L12</u>	PTA same antibody same dendritic	3	<u>L12</u>
<u>L11</u>	pertussis and antibody	2735	<u>L11</u>
<u>L10</u>	L7 and chemokine	30	<u>L10</u>
<u>L9</u>	L8 and chemokine	3	<u>L9</u>
<u>L8</u>	L7 and @RLAD<19990311	93	<u>L8</u>
<u>L7</u>	TECK or CKb15 or SCYA25 or CCL25	499	<u>L7</u>
<u>L6</u>	L3 and @RLAD<19990311	944	<u>L6</u>
<u>L5</u>	L4 and @RLAD<19990311	2	<u>L5</u>
<u>L4</u>	L3 and 11	30	<u>L4</u>
<u>L3</u>	L2 and chemokine	2735	<u>L3</u>
<u>L2</u>	TECK or CKb15 or (Ck?sub.b 15) or (Ck?sub.beta 15) or SCYA25 or CCL25	3673904	<u>L2</u>
<u>L1</u>	CCR9 or GPR-9-6 or CMKBR9 or CC-CKR-9 or CKR-9	37	<u>L1</u>

END OF SEARCH HISTORY